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## PELLAGRA: A REPORT ON AN EPIDEMIOLOGIC STUDY.

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During September and October, 1911, the vicinities of Spartanburg, Chester, and Rockhill, S. C., were visited for the purpose of collecting data on the epidemiology of pellagra. The gravity of the pellagra situation in the vicinity of Spartanburg had been realized by the physicians and others. The other two communities were visited at the suggestion of the secretary of the State board of health of South Carolina. The work covered by this report consisted entirely of the collecting of facts and the recording of observations largely of an epidemiologic nature; comments and discussion of these facts are at present considered premature and have been purposely avoided.

While engaged in this work an attempt was made to see and to study as many cases of pellagra as possible and to collect any data which might have a possible bearing on the disease and which might possibly shed some light on its etiology. It was thought possible that some fact or circumstance might be found to be common to a number of cases which would suggest some more or less promising line along which further intensive studies could be made. It would have been desirable to report here upon the total number of pellagrins in any one or all of the vicinities visited, but the practicable impossibility of determining their number was evident from the fact that there were known to be pellagrins in the various communities who had not consulted a physician. Such a determination would have necessitated the taking of a census of the entire population of the community. The local practicing physicians were depended upon entirely for locating and reporting cases. It was the kindness and cooperation of the local profession that made it possible for me to collect the data included in this report. With the assistance of the various local physicians I was able to collect a series of 380 cases of pellagra (series SCY). These cases were distributed among the three vicinities as follows:

From Spartanburg and vicinity.....	202
From Chester and vicinity.....	79
From Rockhill and vicinity.....	99
Total.....	380

This report is made up only from the data pertaining to this series.

A 5 by 8 inch card was used for recording data in each case, which in conjunction with a supplementary blank was found to be fairly satisfactory. The two sides of the card are shown here and are self-explanatory. In this way notes were obtained upon the 380 cases of pellagra, including cases personally visited and cases and deaths reported to me.

FACE OF CARD.

Series Case	Name	Address	Date
Seen with		Note	Diagnosis
Reported by		Nativity	Occupation
Age	Sex	Race	M. S. W.
FAMILY	PERSONAL	Date of onset	PELLAGROUS (present attack)
		Residence at	(Town)
		Number and health of family	(State)
Children	Marriage	Food	
		Water supply	
Remarks	Residences	City, Town, Rural	
		Relation to water courses	
		Remarks	

## REVERSE OF CARD.

## PELLAGROUS (First Attack)

Date of.....  
Residence at.....  
Number and health of family.....  
Relation to other cases.....  
To heredity.....  
To animals.....  
Food.....  
Corn.....  
Water supply.....  
To watercourses.....  
.....  
.....

## ENVIRONMENT AND CONDITIONS

Topography.....  
Location of house—City, Town, Rural.....  
Economic.....  
Sanitation.....  
Watercourses.....  
Water supply.....  
Remarks.....  
.....  
.....  
.....

With reference to race and sex these cases were as follows:

	Cases visited.	Cases reported.	Deaths reported.	Total of group.	Percent- age of whole.
White females.....	61	127	58	246	64.8
White males.....	19	58	18	95	25.0
Colored females.....	1	12	8	21	5.5
Colored males.....	2	3	5	10	2.6
Unclassed.....		8		8	2.1
Total.....	83	208	89	380	100.0

The 83 cases personally visited according to age were as follows:

Age group.	White.		Colored.		Total.
	Females.	Males.	Females.	Males.	
0 to 10 years.....	5	6		1	12
11 to 20 years.....	5	2			7
21 to 30 years.....	22	2			24
31 to 40 years.....	12	1	1		14
41 to 50 years.....	10	1			11
51 to 60 years.....	6	4		1	11
61 to 70 years.....	1	2			3
71 to 75 years.....		1			1
Total.....	61	19	1	2	83

Of this number, 53 were married, 21 were single (including 12 children), and 9 were widowed.

#### CONSIDERATION OF CASES VISITED.

*Environment and conditions.*—The counties visited are located in the Piedmont section of South Carolina, between the lower tidewater country on the east and the higher mountainous section on the west. Between the tidewater and the Piedmont sections there is a line of falls stretching across the State in a northeast-southwest direction. This is locally known as the "fall line," and it is from north of this line that most of the cases of pellagra in the State have been reported. The towns of Spartanburg, Chester, and Rock Hill are located above this line, but lie east of the mountains. Their elevations above the sea level are 875, 539, and 664 feet, respectively. The topography of the country here is hilly and offers good natural drainage. The many streams are usually swiftly flowing and have numerous falls. Running streams are abundant in these counties, and it is impossible for the people to live any great distance from some one of them. None of the pellagrous homes that I visited were located more than a half mile from a stream, and in the majority of cases there was a stream 200 or 300 yards from the house. The cotton-mill villages visited were found located in the vicinity of some running water. This was a common observation.

The locations of the homes of the cases personally visited were as follows:

In a cotton-mill village or in the cotton-mill section of a town.....	70
In a town, but not in the cotton-mill section.....	7
In the country.....	6
Total.....	83



The cotton-mill workers, among whom so many of the cases of this series occurred, appeared to be poor, overworked, and underfed. They were found living in cottages located around the mills in which they were employed. These little villages are usually well looked after by the mill operators, but the authority of the mill operators does not extend to the interior of the homes, where in many instances were evident the signs of poverty and extreme neglect. With the exception of a very few, it can be said that the general hygienic conditions of the homes visited among this class were uniformly bad. Specimens of the ordinary bed bug were collected from several of the homes by a tactful family physician, and in very few of them, indeed, were conditions such as to lead one to suspect the absence of this parasite.

A condition which adds greatly to the complexity of the pellagra situation among this class of people is that they seem to live at one place only for a short time. They are continually moving from one house to another in the same village, or from one village to another. Of the 83 cases seen only 40 were then living in the same house in which they developed the first symptoms of the disease. The remaining 43 had resided at various places since their first attack. Many of the cotton-mill workers of western South Carolina are natives of the mountains of North Carolina, who have moved to the cotton-mill villages, as the cotton mills offered them a better means of livelihood than the mountains of their native State. In several instances it was learned that the first symptoms of pellagra had developed in these persons shortly after they had moved from the mountains to the environment of the cotton-mill village.

Of this series of 83 cases visited there were 16 who did not belong to the cotton-mill class. Among these there were three female pellagrins who seemed to be in good economic circumstances, to be living under good sanitary conditions, and appeared to be neat and cleanly housekeepers.

The majority of the pellagrins were living in unscreened houses, but the exact number was not determined with reference to this point. In several of the communities visited, mosquitoes were found to be plentiful.

*Occupation.*—The occupation of the 83 cases seen was found to be as follows:

Cotton-mill people:	
Cotton-mill workers.....	17
Housework.....	38
Children.....	12
Farmer.....	1
Farmers' wives.....	4
Railroad man.....	1
Stonecutter.....	1
Housework (not mill people).....	9
Total.....	83

*Food.*—The subject of diet in these cases proved under the circumstances to be too complex to furnish much definite information. The cotton-mill people obtain much of their food from the stores kept by the mill companies, but other stores are also patronized. The sources of food in these cases were found to be varied. Packed meats and canned goods figure largely as articles of diet, fresh vegetables to a limited extent only, and fresh meats to a variable extent. Generally speaking, the food used in the families of the pellagrins

visited among this class was found to be largely imported and to consist of very few home-grown products.

Each one of the 83 pellagrins whom I saw gave a history of having used corn products more or less regularly as an article of diet, either as corn bread, "grits," or in some other form. Corn bread is used extensively in this section of the country and in recent years has been made largely from imported meal. On account of the passing of the old gristmill, to which the farmer took his corn and had it ground, the meal now used is chiefly that which has been ground at some of the large mills of the country and shipped out in large quantities. This kind of meal has been used by all of the 83 pellagrins excepting one. The exception was a farmer's wife, who stated positively that for years she had used only corn raised on her husband's farm. Her husband, however, kept a little "crossroads" store, stocked with the usual array of cans and boxes. It is needless to say that the store was drawn upon to furnish the family larder. No systematic examination of the meal used in these families was made, but it was learned that several lots which had been received at the stores of the cotton-mill companies had been condemned on account of the high degree of acidity which they showed.

*Water supply.*—The sources of water supply of the families in which these 83 cases occurred were found to be as follows:

Well:	
Driven.....	32
Dug.....	25
City supply.....	7
Well and city supply.....	6
Well and spring.....	6
Spring.....	4
Varied.....	3
Total.....	83

*Heredity.*—Practically all of the information obtained regarding these cases has no bearing, or is negative, on this point. The pellagrous mothers and the pellagrous children in this series are grouped below with reference to the condition of the children or mothers, respectively. Only children under 10 years of age are here considered and of the pellagrous mothers only those now having children which were born at or after their first attack of pellagra.

A. Pellagrous mothers.	
(a) With healthy children.....	5
(b) With pellagrous children.....	<sup>1</sup> 2
B. Pellagrous children.	
(a) With healthy mothers.....	10
(b) With pellagrous mothers.....	<sup>2</sup> 2

*Domestic animals.*—No relation could be found between any of the cases in this series and any of the domestic animals or diseases occurring among them. The one family having 4 cases kept 4 goats, which were apparently healthy.

*Relation of cases.*—In many instances the relation of one case to another was found to be varied and often complex. These relations can not be given in detail, but the following classification of them is fairly inclusive:

<sup>1</sup> Children same as "b" in other group.

<sup>2</sup> Ages 4 and 7 years at onset of first symptoms.

A. Case relation in the family (in the same house).	
Having 1 case at time of visit.....	61
Having 2 cases at time of visit.....	8
Having 3 cases at time of visit.....	3
Having 4 cases at time of visit.....	1
B. Miscellaneous relations, including case relations in the family and others.	
(a) No known relation to another case of pellagra.....	17
(b) Previous to onset having had temporary association with a pellagrin.....	9
(c) Onset while living in the immediate vicinity of a pellagrin.....	37
(d) Onset while living in a house with a pellagrin <sup>1</sup> .....	17
(e) Onset while living in a house previously occupied by a pellagrin of another family.....	3
Total.....	83

## CONSIDERATION OF WHOLE SERIES.

*Incidence, etc.*—I was unable to determine with any degree of accuracy the dates at which pellagra made its appearance in these vicinities. The earliest case in Spartanburg County now recalled by the physicians whom I saw seems to have been in the person of a white female living at Enoree on the Enoree River in 1893. The disease was not recognized at this time, but physicians who saw the case are now convinced that it was pellagra. A case is reported to have occurred at Cherokee Springs along a tributary of the Pacolet River in 1891, but I was unable to see the physician who had charge of the case. Physicians now recall having seen cases in other parts of the county before the time of the recognition of the disease and are now confident that they were seeing unrecognized pellagra. In 1904 two females died in Chester County of a disease which was diagnosed as pellagra at the time by Dr. H. E. McConnell, but no report of this observation was made. As far as I was able to determine the first published diagnosis of pellagra in the vicinity of Rock Hill, York County, was made in the spring of 1908. However, unrecognized cases had occurred there before that time. Numerous new cases have appeared from time to time in each one of these counties since the existence of pellagra was recognized there, and apparently each successive year has furnished a larger number of new cases than the year preceding.

The date of onset of the first symptoms of the disease was ascertained in each one of the 83 cases personally visited and in 165 of the cases reported to me. These cases are grouped below with reference to the date of onset:

Date of onset.	Cases visited.	Cases reported.
	<i>Number.</i>	<i>Number.</i>
1911.....	38	78
1910.....	26	44
1909.....	5	16
1908.....	6	6
1907.....	3	6
1906.....	1	4
1905.....	2	3
1904.....	0	4
1903.....	0	4
1902.....	1	0
"Many years ago".....	1	.....
Total.....	83	165

<sup>1</sup>Included in group "A" above.

*Mortality and insanity rates.*—As has been said, the series of 380 cases includes 89 deaths from pellagra. This gives a mortality rate of 23.8 per cent for the series. A number of the cases visited showed at the time, or gave a history of, some slight mental symptoms, as depression, etc. One of this number was insane and has since been committed to the State hospital for the insane at Columbia. Of the whole series 18 had become insane after the onset of the pellagrous symptoms, which gives a rate of 4.8 per cent for the incidence of insanity among the pellagrins in this series of 380 cases. Practically all of these 18 insane cases had been confined, at least for a time, in the State hospital for the insane. Some of these have remained there, while others have returned to their homes much improved.

#### CONSIDERATION OF VILLAGE "EM."

One little cotton-mill village in Chester County proved to be of special interest. This was largely due to the fact that the pellagra situation there had been followed from its beginning up to the present time (October, 1911), and all of the cases developing there had been seen by one physician, Dr. H. E. McConnell, of Chester, S. C. About 25 cases of pellagra are known to have developed while living in this village, some of whom are still residing there, while others have moved away or have died.

A rough map of this village, designated "Village EM," is given here. The eastern half of the map represents the cotton-mill village proper and the western half a part of the suburbs of a neighboring town. The population of the area represented in the map is approximately 500, but of this number some are moving in or moving out all the time. The dots in the map are intended to show the locations of residences and the crosses with a circle around them are intended to represent the location of homes of pellagrins. The two groups of houses south of the mill are each situated on a slight elevation. A small stream flows between these two elevations and into a creek about 300 yards distant. I was told that no case of pellagra had been known to develop in the little group of houses represented in the northeast corner of the map.

The homes of the pellagrins have been numbered for the sake of reference. Some notes are given below which refer to houses with corresponding numbers:

1. Case 250, developed pellagra here in 1904. Died.  
Case 257, of a different family, developed pellagra here in 1911.
2. Case 249 developed pellagra here in 1904. Died.
3. Cases 227 and 228 (brothers) developed pellagra here in 1909.  
Case 254 developed pellagra here in 1911.
4. Case 205 developed pellagra here in 1909.
5. Case 253 developed pellagra here in 1909.
6. Case 252 developed pellagra here in 1910.
7. Case 251 developed pellagra here in 1910.
8. Case 251 lived here after onset of disease.
9. Case 214 developed pellagra here in 1911.
10. Case 214 lived here after onset of disease.
11. Case 225 developed pellagra here in 1911.
12. Case 204 developed pellagra here in 1910.
13. Case 255 developed pellagra here in 1910.
14. Case 231 developed pellagra here in 1910.
15. Case 256 developed pellagra here in 1910.
16. Case 203 developed pellagra here in 1911.





17. Case 207 developed pellagra here in 1910.
18. Case 223 developed pellagra here in 1911.
19. Case 206 developed pellagra here in 1911. New House.
20. Case 281 developed pellagra here in 1906.
21. Case 278 developed pellagra here in 1910.
22. Case 278 now living here.
23. Case 241 lived here in 1907.
24. Case 233 developed pellagra here in 1910.
25. Case 232 developed pellagra here in 1910.
26. Case 277 developed pellagra here in 1907.
27. Case 277 now living here.
28. Case 235 developed pellagra here in 1911. Died.
29. Case 211 died of pellagra here in 1911.

I am greatly indebted to Dr. H. E. McConnell for his kindness and assistance rendered in locating cases of pellagra and in obtaining facts of the histories of the houses noted above. Much of the data was given to me by Dr. McConnell himself.

Mosquitoes are prevalent in this village, and screened houses are the exception. A number of the pellagrins here stated to me that bedbugs were present in their homes, but no specimens were collected. The water supply is obtained from driven wells located at various places throughout the village. Much of the food used by these people is obtained from the store located near the railroad switch, but other stores are also patronized.

It may be of interest to state here that Mr. W. V. King, of the Bureau of Entomology, United States Department of Agriculture, stated to me that he had collected specimens of the larva of the fly *Simulium* from the water of the little creek to the east of the village.

In conclusion, I wish to thank the many physicians of Spartanburg, Chester, and Rock Hill who, by their kindness and cooperation in this work, greatly assisted me in collecting the data which has made this report possible.



# UNITED STATES.

## MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

### BOISE CITY, IDAHO.

#### COMMUNICABLE DISEASES—REPORTS OF CASES, DISINFECTION OF PREMISES.

SECTION 1. That section 12 of ordinance No. 746 of the revised ordinances of Boise City, County of Ada, State of Idaho, be, and the same is hereby, amended to read as follows:

SEC. 2. It shall be unlawful for any physician, Christian Science healer, Divine healer, faith cure, osteopath, chiropracter (sic), or any person or persons whatever, who profess to cure diseases by whatsoever means or method, or who has charge of or professionally prescribes for any person sick, injured, or diseased, regardless of whatsoever name or title he or she may assume, and any and all persons who have knowledge of any person sick, suffering, or afflicted with any contagious disease, to fail or refuse to report the same, in writing, within 10 hours of the existence of such disease, and the name of the person afflicted therewith, as soon as he or she shall become cognizant of the fact, to the health officer of the said Boise City, County of Ada, State of Idaho.

SEC. 3. The diseases hereinafter designated shall be for all intents and purposes of this ordinance considered contagious and infectious, to wit:

Cholera, scarlet fever, cerebrospinal meningitis, chicken pox, membranous croup, whooping cough, typhus fever, typhoid fever, diphtheria, yellow fever, smallpox, measles, bubonic plague, tuberculosis, and infantile paralysis.

SEC. 4. Every person who finds a patient or patients showing symptoms as to indicate that such patient or patients may have any of the aforesaid diseases, as mentioned in section 3 of this ordinance, or in case there is no attending physician or nurse caring for such patient or patients, the head of the household or proprietor of any hotel, lodging house, hospital, or sanitarium shall report the same to the health officer of the said city, as hereinbefore designated, and any person or persons failing so to do shall be punished as hereinafter provided.

SEC. 5. Any person violating or failing to comply with the provisions of this ordinance shall be deemed guilty of misdemeanor, and upon conviction thereof shall be fined a sum not to exceed \$100, or by imprisonment in the city jail not to exceed 30 days, or by both such fine and imprisonment.

SEC. 6. That section 28 of ordinance No. 746 of the revised ordinances of Boise City, County of Ada, State of Idaho, shall be, and the same is hereby, amended to read as follows:

SEC. 7. Upon the death or convalescence of any person or persons suffering from or afflicted with any of the contagious or infectious diseases named in section 12 of this ordinance, the health officer shall at once cause the premises, room or rooms, house or houses where said persons or person may be found, together with the contents thereof, to be thoroughly disinfected, cleaned, fumigated, or dealt with in a manner within the discretion of said health officer whenever he may deem necessary, in order to prevent the further spread or infection of said disease or diseases, and in extreme cases he shall have authority to destroy the contents of aforesaid premises.

SEC. 8. Fumigating or otherwise cleaning of any premises aforesaid shall be done at the expense of the owner, lessee, tenant, or occupant of said premises, room or rooms, house or houses, and no quarantine shall be raised until after the expense incurred for such fumigating shall have been paid; and in the event that any person shall be unable to pay for such fumigating, then the same shall be paid by the said Boise City out of the general fund of said city.

SEC. 9. This ordinance shall take effect and be in force immediately after its passage and approval.

SEC. 10. Hereby repealing all ordinances and parts of ordinances in conflict herewith. [Ordinance No. 959, adopted Sept. 1, 1911, amending secs. 12 and 28 of ordinance No. 746, adopted June 11, 1907.]

#### BROOKLINE, MASS.

##### GARBAGE AND REFUSE—CARE AND DISPOSAL.

#### Art. III. *Waste Material—Garbage.*

SECTION 1. All waste material set out for removal by the town shall be kept in separate receptacles.

SEC. 2. One or more of such receptacles shall be used exclusively for garbage or swill and shall be water-tight, have tight-fitting covers, and be kept clean and free from deposits of garbage. (An underground garbage receptacle is urgently recommended.)

SEC. 3. A second receptacle or receptacles, preferably made of iron, shall be used exclusively for ashes, tin cans, bottles, and other incombustible waste.

SEC. 4. A third separate set of receptacles shall be used exclusively for dry combustible waste, such as paper, old shoes, house sweepings, and such other waste material as it is customary for the town to remove.

SEC. 5. No person shall overhaul the contents of receptacles for waste material set upon the sidewalks to be removed by the town.

SEC. 6. No person shall throw upon the sidewalk, or into any public street or catch-basin, any paper, tin can, house sweepings, lawn rakings, old shoes, orange peel, banana skin, dead animal, or other waste material. [Ordinance board of health, adopted Nov. 6, 1911.]

#### LAWRENCE, MASS.

##### BREAD—EACH LOAF TO BE WRAPPED.

REGULATION 85. All bread offered or intended for sale shall be suitably wrapped, each loaf separately, in parafin paper in such manner as to completely protect the bread from dust and dirt. [Regulation board of health, adopted July 1, 1911.]

#### MORRISTOWN, N. J.

##### KEEPING OF DOMESTIC ANIMALS—CHICKENS, FOWLS, AND POULTRY.

No person, firm, or corporation shall hereafter keep or maintain any poultry, fowls, or chickens in houses, pens, coops, or runs within a distance of 30 feet from any dwelling house, nor within 12 feet of any street fence line without a written permit from the board of health, and all chicken houses, pens, coops, and runs must be kept in a sanitary condition. Any person, firm, or corporation violating this ordinance, shall, on conviction thereof, pay a fine or penalty of not less than \$10 for each offense: *Provided, however,* That this ordinance shall not apply to, nor be enforceable against, any person, firm, or corporation engaged in the business of the buying and selling of poultry, fowls, and chickens in the regular course of trade. [Ordinance board of health, adopted Dec. 11, 1911.]

#### PIQUA, OHIO.

##### PRIVIES AND CESSPOOLS, CLEANING OF, AND REMOVAL OF NIGHT SOIL—STABLES AND MANURE, CARE AND DISPOSAL OF.

SECTION 1. That it shall be unlawful for any person or persons to remove and haul in and through said city any night soil, contents of privy vaults, cesspools, and sinks, and other offensive matter, except in carts or wagons the beds of which are water-tight, or in water-tight barrels, such carts, wagons, or barrels to be provided with air-tight lids, covers, or valves which will prevent the escape of offensive odors therefrom, and all such lids, tops, covers, or valves shall be shut and securely fastened when any of the matter aforesaid is being removed or hauled in such carts, wagons, or barrels, and all such wagons, carts, or barrels shall be kept thoroughly cleansed and disinfected and shall not be used when otherwise.

SEC. 2. That all privy vaults after being emptied, also all night soil and the contents of sinks, privies, vaults, and cesspools and all noxious substances, shall, before removal or exposure, be disinfected and rendered inoffensive by the person or persons removing the same.

SEC. 3. That no persons shall empty nor attempt to empty any vault, sink, or cesspool in the city of Piqua, except in pursuance to a permit therefor first received from the health officer of said city.

SEC. 4. That no privy vault, closet, or cesspool shall be hereafter constructed or permitted to remain on any premises accessible to a public sewer, except when properly connected with the sewer. In cases where such privy vault, closet, or cesspool now exists the same shall be discontinued as soon as they become filled or foul so that cleaning is necessary.

SEC. 5. That the owner, lessee, tenant, and occupant of any stable, stall, or apartment or barn or poultry yard in which any horse, cattle, or any other animal or fowl shall be kept, or any place in which manure or any liquid discharge of such animals or fowls shall collect or accumulate, shall cause said manure and liquid discharge to be placed and kept in closed bins securely covered at all times to protect it from flies as much as practicable, and said manure and liquid discharge shall be hauled away at least once a month during the interval between the 1st day of April and the 1st day of December, or at such more frequent intervals as the health officer shall order or direct, and all such stables, stalls, and apartments, drains, yards, and appurtenances thereof shall at all times be kept in a cleanly and sanitary condition, and no offensive smell shall be allowed to escape therefrom.

SEC. 6. That any person or persons violating any of the provisions of this ordinance shall, upon conviction thereof, be fined in any sum not more than \$50 and costs of prosecution.

SEC. 7. This ordinance shall take effect and be in force from and after the earliest period allowed by law. [Ordinance adopted July 3, 1911.]

#### TACOMA, WASH.

##### MILK—PRODUCTION, CARE, AND SALE.

SECTION 1. It shall be unlawful for any person to sell, exchange, or deliver, offer or expose for sale, or have in his possession with intent to sell or deliver, within the city of Tacoma—

- (1) Any unwholesome milk or cream; or
- (2) Any milk containing less than 8.75 per cent of milk solids, exclusive of fat, or less than 3.25 per cent of fat, except in the manner and under the conditions prescribed for the sale of skimmed milk; or
- (3) Any skimmed milk except under the name of "skimmed milk" and in cans or other receptacles plainly stamped or marked in some conspicuous place with the words "Skimmed milk"; and every person who shall sell or serve, or keep for sale or for the purpose of serving in any hotel, restaurant, or boarding house, any skimmed milk, shall display in a conspicuous place in the room where the same is sold or served, a placard bearing the words in large letters "Skimmed milk sold here"; or
- (4) Any cream containing less than 18 per cent of fat.

SEC. 2. Milk or cream shall be deemed to be unwholesome in the following cases:

- (1) When any foreign substance has been added thereto or placed therein for the purpose of thickening, coloring, or preserving the same; or
- (2) When it contains any pathogenic bacteria or germs, pus cells, or blood cells; or
- (3) When it contains more than 200,000 bacteria or germs of all kinds to the cubic centimeter; or
- (4) When any water has been added thereto; or
- (5) When any part of it has been drawn from a cow fed on refuse or unwholesome food; or
- (6) When any part of it has been drawn from an unhealthy or dirty cow, or cow kept in an unclean shed, or has been milked by unclean milkers; or
- (7) When any part of it has been contaminated; or
- (8) When any part of it has been exposed to any contagious or infectious disease; or
- (9) When any part of it has been drawn from a cow within 10 days before or 5 days after parturition, or in any case before such cow is free from fever.

SEC. 3. Skimmed milk is hereby defined to be any wholesome milk from which the cream has been removed or which contains less than 3.25 per cent of butter fat.

SEC. 4. It shall be unlawful to keep or maintain a dairy within the city of Tacoma. The maintenance of a dairy is hereby defined to be the keeping of more than two cows and selling the whole or any part of the milk therefrom.

SEC. 5. It shall be unlawful for any person to sell or deliver, offer or expose for sale, or have in his possession with intent to sell or deliver, any milk or cream in the city of Tacoma without having a permit so to do duly issued by the health officer of said city, or without having such permit displayed in a conspicuous manner in his place of busi-

ness, or without having the number of such permit and the name of the owner thereof printed in a conspicuous manner on both sides of every wagon or other vehicle used for the sale or delivery of milk or cream. Application for a permit shall be made in writing and upon blanks provided by said health officer for that purpose, on which shall be stated the name of the applicant, the location of his place or places of business, the number of cows, if any, owned or controlled by such applicant, the location of any dairy or dairies other than his own from which he secures or proposes to sell milk, the number and description of all wagons or other vehicles to be used by the applicant in his business; and no permit shall be granted to said applicant by said health officer until the city milk inspector shall have inspected the cows owned or controlled by the applicant, and the cows of all other persons, if any, from whom he obtains or intends to obtain milk or cream; the stables or barns in which such cows are kept, the food upon which such cows are fed, and their water supply and the apparatus used or to be used by said applicant in caring for, gathering and distributing milk or cream, and shall have certified to said health officer that said cows are in healthy condition, apparently free from disease, and that the stables or barns in which such cows are kept, the appliances used or to be used in caring for, gathering, or distributing milk or cream are in a clean and sanitary condition, and that the food upon which said cows are fed is clean and wholesome.

If, after the issuance of any permit, the applicant shall change the location of his place of business, notice thereof shall be given forthwith to the health officer.

Such permit shall be issued without cost and shall remain in force for a period of one year.

In case additions are made from time to time to the herd of cows belonging to the holder of any permit, or to any of the herds of cows from which he obtains milk, it shall be his duty at such time to immediately report such fact to the health officer, in order that such cows may be inspected.

SEC. 6. It shall be unlawful for any person to sell milk or cream, or offer it for sale in any booth, stand, store, or market place in the city of Tacoma without first registering his name and place of business in the book kept by the inspector of milk of said city for that purpose.

SEC. 7. It shall be unlawful for any retail or wholesale dealer in milk in the city of Tacoma to sell, offer, or expose for sale any milk or cream unless the same shall have been procured by him from a dairy or dairies which have been duly inspected and have complied with the provisions of this ordinance.

SEC. 8. It shall be unlawful for any person to ship or bring into the city of Tacoma for the purpose of selling or offering for sale, or sell or offer for sale therein, for human food, any milk or cream unless the cans, vessels, and receptacles used in handling the same, and all packages, refrigerators, compartments, or other places where such milk or cream is kept, stored, or handled, shall be kept and maintained clean and neat and free from the presence of any article or thing of any kind likely to contaminate or injure the quality or sweetness of such milk or cream, and unless the cans or other receptacles in which such milk or cream is kept shall be used for such purposes only, and shall be thoroughly sterilized with boiling water or live steam each time they are used; and unless all pouring cans, dippers, or other vessels used in handling or delivering such milk shall be scalded and sterilized daily. All bottles in which milk or cream is distributed shall be washed clean and sterilized immediately before they are used and sealed immediately after they are filled.

SEC. 9. All milk brought or shipped into the city of Tacoma to be sold for human food shall immediately after being drawn from the cow be aerated and cooled to a temperature of not to exceed 60° F., and until such milk or the cream therefrom is delivered to the consumer it shall be kept at a temperature not to exceed that above specified.

SEC. 10. It shall be unlawful for any person to sell milk or cream at retail in the city of Tacoma on and after the 1st day of February, 1912, in any manner whatsoever except in glass bottles or other receptacles securely sealed, which milk or cream shall be bottled or placed in said receptacles at the dairy where it is produced, or at a milk depot, storeroom, or other place kept exclusively for the purpose of storing and handling milk and maintained in a cleanly and sanitary condition. In no case shall milk or cream be bottled in the wagon or vehicle in which it is being conveyed or from which it is being distributed: *Provided, however, That* this section is not intended to prohibit restaurants, hotels, or boarding houses from serving milk or cream to guests in any other manner.

The sale of milk or cream at retail is hereby defined to be the sale of milk or cream in quantities of 1 gallon or less.

SEC. 11. It shall be the duty of the milk inspector to inspect from time to time all dairies selling or supplying milk for sale in the city of Tacoma. He shall inspect the

cows, the stables, drainage, ventilation, food, water, yards, pasture, methods of milking, and all matters connected with the care and management of such dairies. He shall inspect all places and vehicles in or from which milk or cream is sold, offered or exposed for sale, kept, stored, delivered or disposed of, including restaurants, hotels, and boarding houses, and all vessels, cans, receptacles, refrigerators, compartments of any store, building, or other place used in storing, handling, delivering, or disposing of milk or cream in the city of Tacoma, to ascertain whether the provisions of this ordinance are being complied with, and report to the board of health any violation thereof. In order to make such inspection he shall have the right to enter and shall have free access to any building, establishment, vehicle, or place where such milk is produced, being transported, stored, kept, or offered for sale, and he shall have the right to take samples of milk or cream therefrom in quantities not to exceed 1 quart each for the purpose of inspecting, testing, or analyzing the same.

Sec. 12. Nothing in this ordinance shall be so construed as to prohibit the sale of what is commonly known as buttermilk, provided the same is produced from pure, healthful, wholesome, and uninfected milk.

Sec. 13. The word "person" wherever used in this ordinance shall be held and construed to mean any person, firm, or corporation, and the act of an agent or servant shall be deemed to be the act of the principal or employer.

Sec. 14. Any person violating any of the provisions of this ordinance shall, upon conviction, be fined in any sum not exceeding \$100 or imprisoned in the city jail for a period not exceeding 30 days.

Sec. 15. All ordinances and parts of ordinances in conflict herewith are hereby repealed. [Ordinance adopted Jan. 3, 1912.]



## CEREBROSPINAL MENINGITIS IN TEXAS.

A report by Passed Asst. Surg. R. H. von Ezdorf.

Referring to bureau telegram dated January 16, 1912, directing me to proceed immediately to Dallas, Tex., by way of Austin, and to confer with the State health authorities relative to the prevalence of cerebrospinal meningitis, I have the honor to make the following report:

### DALLAS.

The cases reported in Dallas up to January 22, 1912, were as follows:

	Cases.	Deaths.
October, 1911.....	1	1
November, 1911.....	9	6
December, 1911.....	73	45
Jan. 1 to 22, 1912.....	156	55
Total.....	239	107

According to color and sex, these cases were distributed as follows:

	Cases.	Deaths.
White male.....	107	58
White female.....	65	22
Colored male.....	37	13
Colored female.....	30	14

Classed according to ages, they were:

Less than 1 year.....	12
1 to 4 years.....	30
5 to 9 years.....	41
10 to 14 years.....	14
15 to 19 years.....	27
20 to 29 years.....	40
30 to 39 years.....	23
40 to 49 years.....	26
50 years and over.....	15
No age given.....	11
Total cases.....	239

The cases were widely scattered and occurred in all parts of the city. In 10 or 12 families more than 1 case had occurred.

A visit was made to the city hospital of Dallas, which since January 7, 1912, had been used exclusively for the treatment of cerebro-



spinal meningitis cases, under the direction of Dr. Abraham Sophian of the Research Laboratory of New York City, and Dr. A. W. Nash, the health officer of Dallas.

The use of the specific serum by injection directly into the sub-arachnoidal space, after first removing part of the cerebrospinal fluid, was the treatment used. The hospital was opened January 7 and up to January 22 there had been 106 admissions, which included some cases admitted from the county. There had been 31 deaths among these cases, and 75 cases were still in the hospital. Of these a number were convalescent. The mortality following the serum treatment was reported to be about 10 per cent, while the general mortality in the hospital was higher. This was explained as due to the admission of a number of cases in a moribund state.

The spinal fluid which was obtained from all the cases was sent to Dr. A. E. Thayer, professor of pathology and bacteriology, Baylor University, School of Medicine and Pharmacy, for examination, and in all the meningococcus was found.

Since January 13, 1912, examinations for carriers have been made of persons who were known to have come in contact with cases of the disease—that is, of families among whom cases developed.

The method of making these examinations was as follows: Smears were obtained by use of swabs taken from the nose and throat, and the swabs used for the inoculation of culture tubes of sheep's serum broth. This work was done by a corps of 5 fourth-year medical students who had been instructed regarding the technique of obtaining the specimens. Each student was furnished with a bag containing the following:

- 1 dozen slides.
- 1 dozen sterile swabs in tubes.
- 1 flask sheep's serum glucose broth.
- 1 flask alcohol.
- 1 alcohol lamp.
- 1 dozen Petri dishes with adhesive strap.
- 1 notebook.

The microscopic examinations were made by Dr. A. E. Thayer. Smears found to show numerous diplococci having the morphological appearance of the meningococcus and differentiated from the micrococcus catarrhalis by staining with Loeffler's methylene blue, were rated as positive. These findings were checked with the cultures obtained on the following day.

The results of smear examinations for the period January 13, 1912, to 5 p. m. January 26, 1912, were as follows:

*On first examination.*

Nose and throat both positive.....	152
Nose or throat one positive.....	99
Nose and throat both negative.....	170
Total.....	421

This shows an examination of 421 persons, among whom 59.6 per cent were reported to be positive healthy carriers on the first examination.

The results obtained from cultures showed 53.75 per cent of the first examinations to be positive instead of 59.6 per cent as recorded by smear examinations.

The total number of smear examinations made was 635, which includes reexaminations a second, third, and fourth time. The results obtained give 205 positive for nose and throat, 145 positive for nose or throat, and 285 negative; that is, 55 per cent positive findings.

In consideration of the fact that an epidemic prevailed and that diplococci as well as the *micrococcus catarrhalis* were to be found so prevalent among contacts, in the smears alone, it was accepted as a public health policy to consider those persons, from whom these findings were reported, to be carriers until proven otherwise on culture examinations.

House quarantine was practiced and all contacts were required to remain in their homes, the houses being placarded. Release from quarantine was made dependent upon a negative microscopic finding of swab examinations from the nose and throat of all inmates, and so long as there was a positive finding the observation continued. The house quarantine was carried out on the honor system, except in a few instances, where guards were placed during the day-time only.

A sanitary campaign of cleaning up was also started. A board of diagnosis, consisting of 4 physicians, was appointed.

#### FORT WORTH, TEX.

There had been reported the following number of cases:

	Cases.	Deaths.
December, 1911.....	4	2
Jan. 1 to 24, 1912.....	57	23
Total.....	61	27

These cases occurred mainly in the insanitary sections of the city. As many as could be induced to enter the college hospital were treated there.

It was learned that the public schools had not been closed during the month, and that with 11,000 pupils attending only 3 had developed the disease, and that only 1 of the 3 was a regular attendant.

In one family only had 2 cases occurred, and these developed 12 days apart. Serum for the treatment for all cases was furnished by the mayor's office to the physicians reporting cases.

Microscopic examinations of the spinal fluids obtained from patients, for the confirmation of the diagnosis, were being made.

A circular letter had been printed for distribution to the public and to all school children. This circular reads as follows:

#### INFORMATION REGARDING PREVENTION OF MENINGITIS.

(Furnished by the city advisory committee of five physicians and City Physician W. M. Trimble.)

1. Use by everyone of any good antiseptic, sprayed thoroughly into nose and throat from an atomizer, not less than three times daily.
2. Thorough cleaning of the house and premises and careful attention to personal cleanliness.
3. Remain at home as much as possible, avoid mingling with crowds and promiscuous visiting among friends and relatives.

4. Dress to meet changes in the weather and pay strict attention to maintaining the highest standard of health.

This germ is one of the most easily killed of any known and with the cooperation of the public can be quickly stamped out.

#### WACO, TEX.

The report of cases at Waco was as follows:

	Cases.	Deaths.
December, 1911.....	51	20
Jan. 1 to 25, 1912.....	68	24
Total.....	119	44

Tabulated according to color and sex, these cases occurred as follows:

	Cases.	Deaths.
White male.....	47	19
White female.....	37	11
Colored male.....	21	9
Colored female.....	14	5

There were 4 families in which 2 cases of the disease occurred in each. So far as practicable, cases were removed to the Provident Sanitarium.

The city authorities were having a building, which had formerly been used as a hospital, renovated for the occupancy and treatment of cerebrospinal meningitis cases only.

An inspection of places where cases of the disease were reported was also made. Upon the removal of a case to the hospital the house was disinfected with formaldehyde and the family released from further observation.

At a special meeting of the board of health there were adopted measures relating to the detection and quarantine of carriers found among direct contacts, and requiring that no convalescent be discharged until proved not to be a carrier of the organisms in nose or throat secretions.

#### HOUSTON, TEX.

Upon the request of the governor and State health officer, an inspection was made of the convict farm, about 20 miles from Houston, where a case of the disease had occurred in the family of the physician of the camp. The infection in this case was traced outside of the camp.

At Houston there had been reported between January 1 and 29, 1912, inclusive, 26 cases of cerebrospinal meningitis, with 9 deaths.

Detailed according to color and sex, these occurred as follows:

	Cases.	Deaths.
White males.....	9	2
White females.....	3	1
Colored males.....	11	6
Colored females.....	3	.....
Total.....	26	9

Isolation of patients in the isolation hospital was done as far as practicable. House quarantine by placarding was practiced. No contact or convalescent had been released from quarantine, and such release I was informed would only be made on the negative bacteriological examination of the nose and throat secretions of such persons.

#### GENERAL.

The reports received to January 27, 1912, by the State health officer showed that there had been 550 cases with 210 deaths reported in 49 different localities in Texas. The chief places where the disease prevailed were Dallas, Fort Worth, Waco, and Houston.

It is remarkable that San Antonio, one of the large cities in Texas, has had no cases reported up to this time, January 25.

At Rockwall, 10 cases with 5 deaths were reported, among which 5 cases and 2 deaths occurred in one family.

The State health officer issued the following circular dated January 8, 1912, to all health officers in the State:

DEAR DOCTOR: Isolate and place in absolute quarantine all cases cerebrospinal meningitis.

On appearance of the disease in your city close public schools and discourage public gatherings.

Insist upon general sanitary measures, clean and disinfect sidewalks, streets, and alleys.

Carriers convey the disease by means of the nose and throat secretions.

Insist upon the enforcement of the antispitting ordinance and advise the use of an antiseptic spray in the nose and throat, as a precautionary measure.

See that all street cars and public conveyances are disinfected.

Yours truly,

RALPH STEINER, *State Health Officer.*

Another circular letter was issued January 23, 1912, as follows:

DEAR DOCTOR: It is doubtful whether a definite quarantine period is sufficient to control the spread of meningitis, as it is known that carriers may carry the meningococcus in their nasal and throat secretions for a period of several weeks. To prevent the spread of the disease in this manner a bacteriological examination of these secretions from all convalescent meningitis patients or persons directly exposed to the disease must be made 10 days after the subsidence of the disease. We have made arrangements for such examinations and request you to assist us. Whether you will continue quarantine will depend in each case upon our findings.

The following is a description of the technique of preparing specimens for examination and instructions which you are to follow:

1. By means of cotton-tipped probes the secretions from the upper portion of each nasal cavity and from the region of the fauces are collected.
2. The secretions are smeared upon a clean glass-cover slip or slide, such as is used in ordinary microscopical work.
3. Two smears are made from each nasal cavity and two from the throat, making a total of six smears to be made.
4. Label each smear, indicating whether taken from nose or throat.
5. Give name, address, age, sex, color, and occupation of each person from whom the smears were taken, and also state whether a convalescent or merely one exposed to meningitis.
6. Send specimens and information requested to State bacteriologist, Austin, Tex.

Yours, truly,

STATE HEALTH OFFICER,  
STATE BACTERIOLOGIST.

## SUMMARY.

The history of the present epidemic for 1911-12 begins with the cases reported in Dallas with 1 case in October and 9 cases in November, increasing in December and January, and averaging in January about 7 new cases a day.

In Waco the first 9 cases were reported on December 20, after which cases were reported for the remainder of the month on the average of about 5 new cases a day; for January the report of new cases averaged 3 each day.

In Fort Worth the 4 cases reported for December occurred between December 20 and 31, 1911, and the average report of new cases in January, 1912, was about 3 a day.

In Houston the first case was reported January 1, and the average number of new cases was about 1 a day.

A few cases were reported during the latter part of January in Galveston. In other points in Texas cases of the disease were reported in January, San Antonio being the only large city apparently free from the disease.

It was reported that the weather conditions for the northern part of the State had been unusual. During the past three years a drought had occurred so that drinking water had to be shipped into Dallas.

The present winter season was unusual, in that for six weeks, between December and January, continuous rains had occurred, and severe cold weather also prevailed.

It was also reported that an epizootic of "blind staggers" had prevailed among horses about the time this epidemic started.

The occurrence of more than one case in a family has been comparatively rare.

The disease prevailed chiefly among the poorer classes living under insanitary conditions, but others were also affected.

The disease affected males more than females, and the mortality was slightly less among the females.

The extremes in ages were 8 weeks and 80 years.

From the statistics of 302 cases in which the ages were given, 55 occurred in children less than 5 years; 54 between 5 and 10 years; 24 between 10 and 15 years; 44 between 15 and 20 years; 54 between 20 and 30 years; 25 between 30 and 40 years; 27 between 40 and 50 years; and 19 for persons over 50 years of age.

This gives a total of 177 cases, or 58.6 per cent, occurring in persons less than 20 years of age; and 125, or 41.4 per cent, of the cases in those over 20 years of age.

The people in the infected cities seemed to be in perfect accord with the city health authorities in their endeavors to control the spread of infection.



The following measures were found practical of enforcement:

1. Placarding and quarantining of a house.
2. Establishment of an isolation hospital for the care, and treatment with specific serum, of cerebrospinal meningitis cases only.
3. For detecting carriers: Bacteriological examinations of nose and throat secretions of all persons quarantined in houses where cases occurred.
4. Medical inspection service and board of diagnosis.
5. Distribution of circulars advising—
  - (a) Use of an antiseptic spray for nose and throat.
  - (b) Careful attention to personal hygiene, mainly cleanliness; avoid chilling of body, and maintain good health.
  - (c) Avoidance of public gatherings and close contact with persons.
  - (d) Cleaning of premises, and free ventilation of houses.
  - (e) That the disease is infectious, and that healthy persons may innocently transmit it to others by disseminating germs, which may be in their nose and throat, by coughing, sneezing, kissing, etc.
  - (f) That the disease is not carried by clothing, merchandise, food, etc.

It was impossible to trace the source of infection from one case to another; nor was it practicable to determine what factor was necessary in causing the development of the disease in one person and not in another known to be intimately in contact with the disease.

There were a number of towns throughout Texas which quarantined places where the disease had made its appearance. As this was impracticable and gave a false sense of security, owing to the widespread infection and large number of healthy carriers, it was advised that quarantine was ineffective and simply interfered with commerce.

*Cases and deaths reported to Jan. 24, 1912.*

Towns.	Cases.	Deaths.	Towns.	Cases.	Deaths.
Austin.....	5	2	Industry.....	1	
Beeville.....	1		Karnes County.....	5	
Bonham.....	1		Ladonia.....	Present.	
Breckenridg.....	1	1	Lockhart.....	2	1
Brownwood.....	4	1	Kirbyville.....	1	
Brenham.....	2	1	Marlin.....	1	
Columbus.....	1		Mart.....	1	
Cooper.....	1		Mexia.....	2	
Crockett.....	1		Midland.....	3	2
Cuero.....	1		Mineola.....	2	
Canyon.....	1	1	Palestine.....	1	
Clarksville.....	12	Several	Plano.....	1	
Dallas.....	249	110	Rockwall.....	10	5
Dallas County.....	6		Saltillo.....	Epidemic.	
Decatur.....	1		Sandia.....	1	
Dublin.....	1		Sherman.....	3	
Emory.....	11	9	Smithville.....	3	1
Fairfield.....	4		Shiner.....	1	
Forney.....	1	1	Somerville.....	3	
Fort Worth.....	61	27	St. Hedwig.....	1	
Georgetown (county of Wil-			Teague.....	1	1
Hamson).....	4	1	Thurber.....	2	
Gatesville.....	2	1	Tyler.....	4	2
Henrietta.....	1		Waco.....	118	43
Hereford.....	3				
Houston.....	8		Total.....	550	210



## PLAGUE-PREVENTION WORK.

## DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 1,266 acres of land in Alameda County were covered with poison during the week ended February 3, 1912.

During the same period 6,100 acres of land in San Joaquin County and 3,200 acres in Stanislaus County were covered with poison for the purpose of eradicating plague foci.

## RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco.....	Jan. 30, 1908.....	Oct. 23, 1908.....	None.....	398 rats.
Oakland.....	Aug. 9, 1911.....	Dec. 1, 1908.....	do.....	126 rats.
Berkeley.....	Aug. 27, 1907.....	None.....	do.....	None.
Los Angeles.....	Aug. 11, 1908.....	do.....	Aug. 21, 1908.....	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909.....	Wood rat, Oct. 17, 1909.	Oct. 9, 1911.....	114 squirrels and 1 wood rat.
Contra Costa.....	July 21, 1911.....	None.....	Sept. 23, 1911.....	364 squirrels.
Fresno.....	None.....	do.....	Oct. 27, 1911.....	1 squirrel.
Merced.....	do.....	do.....	July 13, 1911.....	5 squirrels.
Monterey.....	do.....	do.....	Aug. 6, 1911.....	Do.
San Benito.....	June 5, 1910.....	do.....	June 8, 1911.....	22 squirrels.
San Joaquin.....	Sept. 18, 1911.....	do.....	Aug. 26, 1911.....	18 squirrels.
San Luis Obispo.....	None.....	do.....	Jan. 29, 1910.....	1 squirrel.
Santa Clara.....	Aug. 23, 1910.....	do.....	Oct. 5, 1910.....	23 squirrels.
Santa Cruz.....	None.....	do.....	May 17, 1910.....	3 squirrels.
Stanislaus.....	do.....	do.....	June 2, 1911.....	13 squirrels.
Washington:				
City—				
Seattle.....	Oct. 30, 1907.....	Sept. 21, 1911.....	None.....	25 rats.

## RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley.....	Feb. 3, 1912.....	2.....	1 157.....	74.....	.....
Oakland.....	do.....	6.....	2 683.....	544.....	.....
San Francisco.....	do.....	8.....	1 464.....	1, 138.....	.....
Counties—					
San Joaquin.....	do.....	.....	1 147.....	147.....	.....
Washington:					
City—					
Seattle.....	do.....	.....	1, 116.....	1, 054.....	.....

<sup>1</sup> Identified: *Mus norvegicus*, 76; *Mus rattus*, 1; *Mus musculus*, 79; *Mus alexandrinus*, 1.

<sup>2</sup> Identified: *Mus norvegicus*, 553; *Mus rattus*, 2; *Mus musculus*, 127; *Mus alexandrinus*, 1.

<sup>3</sup> Identified: *Mus norvegicus*, 728; *Mus rattus*, 240; *Mus musculus*, 325; *Mus alexandrinus*, 171.

<sup>4</sup> Identified: *Mus norvegicus*, 144; *Mus musculus*, 1; *Mus alexandrinus*, 2.

## SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

One squirrel found in Alameda County was examined. No plague infection was found.

## SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health, and include all cases reported to the State authorities.

## REPORTS RECEIVED DURING WEEK ENDED FEB. 23, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
<b>*Alabama:</b>				
Montgomery.....	Jan. 26-Feb. 10....	4		
<b>Florida:</b>				
Counties—				
Baker.....	Feb. 4-10.....	1		
Columbia.....	do.....	6		
Duval.....	do.....	21		
Escambia.....	do.....	1		
Franklin.....	do.....	3		
Gadsden.....	do.....	4		
Leon.....	do.....	9		
Marion.....	do.....	1		
Orange.....	do.....	4		
Putnam.....	do.....	1		
St. Johns.....	do.....	1		
Volusia.....	do.....	1		
Total for State.....		53		
<b>Kansas:</b>				
Counties—				
Allen.....	Nov. 1-30.....	9		
Anderson.....	do.....	5		
Bourbon.....	do.....	4		
Cowley.....	do.....	12		
Doniphan.....	do.....	7		
Harvey.....	do.....	1		
Jefferson.....	do.....	1		
Jewell.....	do.....	2		
Lyon.....	do.....	1		
Shawnee.....	do.....	4	2	
Woodson.....	do.....	164		
Total for State.....		210	2	
Bourbon.....	Dec. 1-31.....	2		
Coffey.....	do.....	21		
Cowley.....	do.....	20		
Doniphan.....	do.....	8		
Graham.....	do.....	3		
Johnson.....	do.....	1		
Lyon.....	do.....	1		
Ness.....	do.....	2		
Reno.....	do.....	5		
Riley.....	do.....	2		
Shawnee.....	do.....	2		
Sumner.....	do.....	4		
Woodson.....	do.....	131		
Wyandotte.....	do.....	3		
Total for State.....		205		
<b>*Kentucky:</b>				
Newport.....	Feb. 4-10.....	1		
<b>Massachusetts:</b>				
Counties—				
Hampden.....	Jan. 1-31.....	1		
Middlesex.....	do.....	6		
Suffolk.....	do.....	4		
Total for State.....		11		
<b>*Missouri:</b>				
Kansas City.....	Dec. 1-31.....	16		
St. Louis.....	Feb. 4-10.....	1		
Total for State.....		17		

## SMALLPOX IN THE UNITED STATES—Continued.

Reports received during week ended Feb. 23, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
<b>North Dakota:</b>				
Counties—				
Cass.....	Jan. 1-31.....	5		
McHenry.....	do.....	16		
Renville.....	do.....	2		
Stutsman.....	do.....	1		
Wells.....	do.....	1		
Total for State.....		25		
<b>Ohio:</b>				
Counties—				
Defiance.....	Jan. 1-31.....	1		
Franklin.....	do.....	8		
Hamilton.....	do.....	7		
Lucas.....	do.....	58		
Madison.....	do.....	5		
Morgan.....	do.....	4		
Ottawa.....	do.....	3		
Stark.....	do.....	7		
Total for State.....		93		
<b>*Tennessee:</b>				
Chattanooga.....	Feb. 4-10.....	1		
<b>Vermont:</b>				
Counties—				
Caledonia.....	Jan. 1-31.....	16		
Chittenden.....	do.....	2		
Essex.....	do.....	5		
Franklin.....	do.....	1		
Lamoille.....	do.....	3		
Orange.....	do.....	1		
Orleans.....	do.....	1		
Rutland.....	do.....	2		
Washington.....	do.....	1		
Total for State.....		32		
<b>Virginia:</b>				
Counties—				
Amherst.....	Jan. 1-31.....	4		
Brunswick.....	do.....	5		
Buckingham.....	do.....	1		
Carroll.....	do.....	20		
Mecklenburg.....	do.....	13		
Middlesex.....	do.....	1		
Montgomery.....	do.....	4		
Nansemond.....	do.....	25		
Norfolk.....	do.....	9		
Purcell.....	do.....	8		
Southampton.....	do.....	19		
Washington.....	do.....	5		
Total for State.....		114		
<b>Washington:</b>				
Counties—				
Asotin.....	Dec. 1-31.....	3		
Chelan.....	do.....	2		
Columbia.....	do.....	5		
King.....	do.....	2		
Pend Oreille.....	do.....	13		
Spokane.....	do.....	50		
Stevens.....	do.....	1		
Wahkiakum.....	do.....	4		
Walla Walla.....	do.....	8		
Total for State.....		88		
Grand total for the United States.....		854	2	

For reports received from July 1 to December 29, see Public Health Reports for December 29, 1911. The cumulative table of reported cases of smallpox, heretofore published each week, has been discontinued, and in its place summaries will be published periodically.

## MORBIDITY AND MORTALITY.

## MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED FEB. 3, 1912.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Small- pox.		Tuber- culosis.		Ty- phoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md.....	558,485	210	24	2	8	.....	21	1	.....	.....	45	29	10	1
Boston, Mass.....	670,585	274	54	2	193	3	46	1	2	.....	70	21	4	.....
Chicago, Ill.....	2,185,283	.....	117	17	39	1	160	5	2	.....	116	89	16	3
Cleveland, Ohio.....	560,663	165	21	3	41	.....	28	.....	.....	.....	20	22	1	.....
New York, N. Y.....	4,766,883	1,593	238	22	715	11	306	17	3	.....	480	187	52	13
Philadelphia, Pa.....	1,549,008	494	8	72	1	15	3	47	.....	.....	52	92	5	38
Pittsburgh, Pa.....	533,905	162	24	3	6	.....	16	.....	.....	.....	46	13	3	1
St. Louis, Mo.....	687,029	244	26	5	12	1	25	5	5	.....	41	19	4	.....
Cities having from 500,000 to 600,000 inhabitants.														
Buffalo, N. Y.....	423,715	106	15	1	5	.....	10	.....	.....	.....	10	10	2	.....
Cincinnati, Ohio.....	364,463	134	8	.....	1	.....	16	.....	2	.....	34	20	2	.....
Detroit, Mich.....	465,766	171	25	3	.....	.....	28	.....	1	.....	.....	.....	.....	.....
Los Angeles, Cal.....	319,198	113	12	.....	2	.....	20	.....	4	.....	22	23	3	.....
Milwaukee, Wis.....	373,857	120	12	.....	25	.....	26	4	.....	.....	19	7	22	8
Newark, N. J.....	347,469	116	14	.....	.....	.....	12	.....	.....	.....	35	20	5	.....
New Orleans, La.....	339,075	147	2	1	2	.....	14	.....	2	.....	31	20	3	.....
San Francisco, Cal.....	416,912	162	11	2	347	1	9	.....	.....	.....	31	12	2	.....
Washington, D. C.....	331,069	134	11	2	4	.....	8	2	.....	.....	23	13	4	1
Cities having from 400,000 to 500,000 inhabitants.														
Denver, Colo.....	213,381	70	14	1	4	.....	10	.....	.....	.....	12	.....	.....	.....
Jersey City, N. J.....	267,779	69	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	.....	.....
Kansas City, Mo.....	248,381	30	4	.....	4	.....	5	.....	3	.....	3	1	3	.....
Providence, R. I.....	224,326	84	23	3	10	2	9	1	.....	.....	8	.....	.....	.....
Seattle, Wash.....	237,194	48	7	2	8	.....	2	.....	2	.....	5	3	2	2
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn.....	102,054	36	2	.....	1	.....	6	.....	.....	.....	1	1	.....	.....
Cambridge, Mass.....	104,839	.....	8	4	4	.....	4	.....	.....	.....	4	3	.....	.....
Columbus, Ohio.....	181,548	64	4	.....	40	.....	15	.....	.....	.....	4	4	1	.....
Dayton, Ohio.....	116,577	35	.....	.....	1	.....	1	.....	.....	.....	1	3	1	1
Fall River, Mass.....	119,295	40	2	.....	1	.....	3	.....	.....	.....	8	3	.....	.....
Grand Rapids, Mich.....	112,571	27	2	1	1	.....	5	.....	.....	.....	4	1	3	.....
Lowell, Mass.....	106,294	29	3	.....	8	.....	4	.....	.....	.....	2	2	.....	.....
Nashville, Tenn.....	110,364	50	1	.....	1	2	.....	.....	.....	.....	5	10	.....	.....
Oakland, Cal.....	150,174	49	1	1	3	.....	.....	.....	.....	.....	4	5	.....	.....
Spokane, Wash.....	104,402	.....	2	.....	16	.....	2	.....	9	.....	1	1	1	.....
Toledo, Ohio.....	168,497	33	6	1	27	.....	11	.....	.....	.....	2	7	1	1
Worcester, Mass.....	145,986	46	8	.....	4	.....	13	1	.....	.....	8	4	1	.....
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa.....	52,127	16	3	1	.....	.....	2	.....	.....	.....	2	.....	.....	.....
Bayonne, N. J.....	55,545	12	4	.....	1	.....	2	.....	.....	.....	3	2	1	.....
Brockton, Mass.....	56,878	19	.....	.....	64	.....	2	.....	.....	.....	3	1	.....	.....
Camden, N. J.....	94,538	.....	3	1	.....	.....	3	.....	.....	.....	5	.....	.....	.....
Duluth, Minn.....	78,466	12	.....	.....	.....	.....	7	.....	2	.....	.....	3	.....	.....
Elizabeth, N. J.....	73,409	42	.....	.....	4	.....	8	3	.....	.....	3	3	.....	.....
Erie, Pa.....	66,525	25	4	.....	.....	.....	2	.....	.....	.....	6	4	2	.....
Evansville, Ind.....	69,647	18	2	.....	.....	.....	.....	.....	.....	.....	1	1	5	.....
Fort Wayne, Ind.....	63,993	21	3	.....	11	.....	1	.....	.....	.....	3	.....	.....	.....
Harrisburg, Pa.....	64,186	25	5	.....	2	.....	1	.....	.....	.....	5	4	.....	.....
Hartford, Conn.....	98,915	.....	7	1	1	.....	4	.....	.....	.....	5	3	.....	.....
Johnstown, Pa.....	55,482	21	2	1	.....	.....	.....	.....	.....	.....	3	1	.....	.....
Kansas City, Kans.....	82,331	.....	1	.....	1	.....	1	.....	.....	.....	2	.....	1	.....
Lawrence, Mass.....	85,892	43	1	1	.....	.....	1	.....	.....	.....	1	3	.....	1
Lynn, Mass.....	89,336	23	2	1	26	1	5	.....	.....	.....	7	2	2	1
Manchester, N. H.....	70,063	31	12	1	41	.....	2	.....	1	.....	1	1	1	.....

## MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Feb. 3, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Small- pox.		Tuber- culosis.		Ty- phoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
<i>Cities having from 50,000 to 100,000 inhabitants—Continued.</i>														
New Bedford, Mass.....	96,652	28	.....	.....	4	.....	2	.....	.....	.....	1	.....	4	.....
Oklahoma City, Okla....	64,205	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Reading, Pa.....	96,071	23	1	.....	1	.....	3	.....	.....	.....	1	.....	1	1
San Antonio, Tex.....	96,614	41	1	.....	12	.....	4	.....	1	.....	.....	12	.....	.....
Schenectady, N. Y.....	72,826	21	1	.....	1	.....	5	.....	.....	.....	4	.....	3	.....
South Bend, Ind.....	53,684	16	1	.....	.....	.....	1	.....	.....	.....	.....	3	.....	3
Springfield, Ill.....	51,678	14	4	.....	.....	.....	1	.....	1	.....	.....	1	.....	.....
Springfield, Mass.....	88,926	32	4	1	37	1	5	.....	.....	.....	3	.....	2	.....
Wichita, Kans.....	52,450	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
Wilkes-Barre, Pa.....	67,105	18	8	.....	130	1	.....	.....	.....	.....	5	.....	.....	.....
Wilmington, Del.....	87,411	37	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	.....
Yonkers, N. Y.....	79,803	27	5	1	3	.....	9	.....	.....	.....	7	.....	2	1
<i>Cities having from 25,000 to 50,000 inhabitants.</i>														
Atlantic City, N. J.....	46,150	6	4	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Aurora, Ill.....	29,807	10	4	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Binghamton, N. Y.....	48,443	20	2	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	2
Brookline, Mass.....	27,792	15	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....
Chelsea, Mass.....	32,452	15	1	1	4	.....	5	.....	.....	.....	3	1	.....	.....
Chicopee, Mass.....	25,401	6	2	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Danville, Ill.....	27,871	12	1	.....	.....	.....	1	.....	1	.....	.....	.....	1	.....
East Orange, N. J.....	34,371	7	.....	.....	5	.....	4	.....	.....	.....	.....	3	.....	.....
Elmira, N. Y.....	37,176	9	2	1	.....	.....	.....	.....	.....	.....	2	1	.....	.....
Everett, Mass.....	33,484	10	3	.....	5	.....	1	.....	.....	.....	1	1	.....	.....
Fitchburg, Mass.....	37,826	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Haverhill, Mass.....	44,115	14	5	1	13	.....	1	.....	.....	.....	5	2	.....	.....
Kalamazoo, Mich.....	39,437	20	.....	.....	2	.....	2	.....	.....	.....	.....	2	.....	.....
Knoxville, Tenn.....	36,346	20	.....	.....	1	.....	.....	.....	15	.....	.....	4	1	.....
La Crosse, Wis.....	30,417	5	1	1	.....	.....	.....	.....	1	.....	.....	1	.....	.....
Lancaster, Pa.....	47,227	.....	.....	.....	1	.....	1	.....	.....	.....	1	.....	.....	.....
Lexington, Ky.....	35,099	20	.....	.....	6	.....	.....	.....	.....	.....	2	1	.....	.....
Lynchburg, Va.....	29,494	13	.....	.....	5	.....	5	.....	.....	.....	1	.....	1	.....
Malden, Mass.....	44,404	8	.....	.....	.....	.....	5	.....	.....	.....	1	.....	.....	.....
Montgomery, Ala.....	38,136	20	1	.....	6	.....	1	.....	1	.....	1	.....	18	.....
Mount Vernon, N. Y.....	30,919	.....	.....	.....	38	.....	1	.....	.....	.....	1	.....	.....	.....
Newcastle, Pa.....	36,280	.....	6	.....	.....	.....	1	.....	.....	.....	1	.....	11	.....
Newport, Ky.....	30,309	14	1	.....	.....	.....	.....	.....	1	.....	3	3	1	1
Newton, Mass.....	39,806	16	1	.....	3	.....	1	.....	.....	.....	.....	2	.....	.....
Niagara Falls, N. Y.....	30,445	17	5	1	1	.....	1	.....	.....	.....	.....	1	1	2
Norristown, Pa.....	27,875	9	.....	.....	20	.....	1	.....	.....	.....	1	1	1	.....
Orange, N. J.....	29,630	23	.....	.....	1	.....	2	.....	.....	.....	.....	1	.....	.....
Pasadena, Cal.....	30,291	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pittsfield, Mass.....	32,121	9	2	.....	.....	.....	1	.....	.....	.....	3	.....	.....	.....
Portsmouth, Va.....	33,190	7	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Racine, Wis.....	38,002	6	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Roanoke, Va.....	34,874	16	2	.....	36	.....	.....	.....	.....	.....	5	5	.....	.....
Rockford, Ill.....	45,401	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salem, Mass.....	43,697	9	.....	.....	1	.....	4	.....	.....	.....	.....	.....	.....	.....
San Diego, Cal.....	39,578	.....	1	.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....
South Omaha, Nebr.....	26,259	5	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Superior, Wis.....	40,384	4	1	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....
Taunton, Mass.....	34,259	18	1	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....
Waltham, Mass.....	27,834	10	1	.....	22	.....	2	.....	.....	.....	.....	.....	.....	.....
Wheeling, W. Va.....	41,641	.....	1	.....	1	.....	.....	.....	.....	.....	3	3	7	.....
Williamsport, Pa.....	31,860	5	2	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....
Wilmington, N. C.....	25,748	14	.....	.....	.....	.....	1	.....	4	.....	1	.....	.....	.....
York, Pa.....	44,750	.....	.....	.....	.....	.....	1	.....	.....	.....	5	.....	.....	.....
Zanesville, Ohio.....	28,026	4	3	.....	.....	.....	1	.....	.....	.....	.....	1	16	.....

## MORBIDITY AND MORTALITY—Continued.

*Morbidity and mortality table, cities of the United States, for week ended Feb. 3, 1912—*  
Continued.

Cities.	Popula- tion, United States census 1910.	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Small- pox.		Tuber- culosis.		Ty- phoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants.														
Ann Arbor, Mich.....	14,817	7					1							3
Beaver Falls, Pa.....	12,191	5	1				1				2			
Bennington, Vt.....		4					1							
Braddock, Pa.....	19,957	7									1	1		
Butler, Pa.....	20,782	2					1				1			
Cambridge, Ohio.....	11,327	2												
Camden, S. C.....							2						1	
Carbondale, Pa.....	17,040	2	2				9							
Clinton, Mass.....	13,075	3	1											
Coffeyville, Kans.....	12,087						3	1			1		1	
Columbus, Ga.....	20,554	6							3		1			
Columbus, Ind.....		4									1			
Concord, N. H.....	21,497	12			1		1				2			
Cumberland, Md.....	21,839	13	1								2		1	
Dunkirk, N. Y.....		1												
Galesburg, Ill.....	22,089	7									1	1		
Harrison, N. J.....	14,498	2	9	2										
Kearny, N. J.....	18,659	7												
La Fayette, Ind.....	20,081	4												
Lebanon, Pa.....	19,240		4										1	
Manistee, Mich.....	12,381						5				1	1		
Marquette, Wis.....	14,610	1			7								3	
Marlboro, Mass.....	14,579	4	2				2				1			
Massillon Ohio.....		1									1			
Medford, Mass.....	23,150	9	2		1		3				1			
Melrose, Mass.....	15,715	5			45						1	1		
Moline, Ill.....	24,199	7												
Montclair, N. J.....		13	2				1				1			
Morristown, N. J.....	12,507	7					1						1	
Nanticoke, Pa.....	18,857	6			14									
Newburyport, Mass.....	19,240	3									1			
North Adams, Mass.....	22,012	10									2			
Northampton, Mass.....	19,431	5			1								3	
Ottumwa, Iowa.....	22,012	10												
Palmer, Mass.....		3												
Peekskill, N. Y.....		6												
Plainfield, N. J.....	22,550	5	1		3		2				7			
Pottstown, Pa.....		9										1	2	
Rutland, Vt.....	13,546	7												
Saratoga Springs, N. Y.....		6									2	1		
South Bethlehem, Pa.....	19,973	8	4		13	1					1			
Steelton, Pa.....	14,246	5												
Warren, Pa.....	11,081	5	4	2			1							
Wilkesburg, Pa.....	15,924	4					2				2			
Woburn, Mass.....	15,308	2	1											



**STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).**

**CONNECTICUT.**—Month of January, 1912. Population of reporting towns, 1,130,847. Total number of deaths from all causes 1,597, including diphtheria 18, measles 4, scarlet fever 10, tuberculosis (pulmonary) 115, typhoid fever 7. Cases reported: Diphtheria 147 in 45 towns, measles 483 in 41 towns, scarlet fever 186 in 43 towns, tuberculosis (pulmonary) 114 in 39 towns, typhoid fever 31 in 19 towns.

**IOWA.**—Month of December, 1911. Population, 2,224,771. Total number of deaths from all causes 1,647, including diphtheria 22, scarlet fever 7, tuberculosis 121, typhoid fever 33.

**KANSAS.**—Month of November, 1911. Population, 1,690,949. Total number of deaths from all causes not reported. The deaths include diphtheria 7, scarlet fever 5, tuberculosis 19, typhoid fever 1. Cases reported: Diphtheria 114, measles 28, scarlet fever 273, smallpox 205, tuberculosis 259, typhoid fever 61.

**MASSACHUSETTS.**—Week ended December 2, 1911. Population of reporting towns, 2,593,485. Total number of deaths from all causes 675, including diphtheria 4, measles 2, scarlet fever 3, tuberculosis 62, typhoid fever 5. Cases reported: Diphtheria 136, measles 180, scarlet fever 114, tuberculosis 99, typhoid fever 38.

Week ended December 9, 1911. Total number of deaths from all causes 713, including diphtheria 13, scarlet fever 2, tuberculosis 64, typhoid fever 6. Cases reported: Diphtheria 142, measles 202, scarlet fever 126, tuberculosis 133, typhoid fever 30.

Week ended December 16, 1911. Total number of deaths from all causes 708, including diphtheria 10, measles 4, tuberculosis 76, typhoid fever 7. Cases reported: Diphtheria 139, measles 309, scarlet fever 154, tuberculosis 146, typhoid fever 30.

Week ended December 23, 1911. Total number of deaths from all causes 670, including diphtheria 10, measles 3, scarlet fever 3, tuberculosis 66, typhoid fever 6. Cases reported: Diphtheria 143, measles 251, scarlet fever 109, smallpox 2, tuberculosis 130, typhoid fever 27.

Week ended December 30, 1911. Total number of deaths from all causes 803, including diphtheria 9, measles 3, scarlet fever 2, tuberculosis 68, typhoid fever 3. Cases reported: Diphtheria 164, measles 251, scarlet fever 110, tuberculosis 116, typhoid fever 22.

## FOREIGN AND INSULAR.

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### AUSTRALIA.

#### Sydney—Examination of Rats.

The following information was taken from bulletins issued by the department of public health of New South Wales: During the two weeks ended December 16, 1911, 881 rats were examined for plague infection. No plague-infected rats were found.

The last case of human plague was reported May 29, 1909.

The last plague-infected rat was found April 25, 1910.

### AUSTRIA-HUNGARY.

#### Hungary Declared Free From Cholera.

According to information dated January 13 received from the ministry for foreign affairs, Hungary has been declared free from cholera.

### CHINA.

#### Amoy—Plague.

Acting Asst. Surg. Bonthius reports the occurrence of a death from plague in the international settlement of Kulangsu during the week ended January 13.

#### Hongkong—Communicable Diseases—Examination of Rats.

Surg. Brown reports that during the month of December, 1911, communicable diseases were reported in Hongkong as follows: Diphtheria 16 cases with 7 deaths, plague 4 cases with 3 deaths, smallpox 47 cases with 38 deaths, and typhoid fever 8 cases with 1 death.

During the same period 6,879 rats were examined for plague infection. No plague-infected rat was found.

### GREECE.

#### Cerebrospinal Meningitis.

Consul General Gale reported January 13 that cerebrospinal meningitis was present in Thessaly, a district situated in the northern part of Greece, and that the disease continued present in Athens and vicinity.

Consul Gale further reported the occurrence of 2 deaths from cerebrospinal meningitis in Piraeus during the week ended January 29.

### HAWAII.

#### Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910.

The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred April 20, 1911, and a fatal case February 9, 1912.

The last plague-infected rat was found at Honokaa December 18, 1911. A plague-infected rat was found at Hilo during the week ended June 10, 1911.

#### Honolulu—Plague-Prevention Work.

Chief Quarantine Officer Ramus reports:

Total number of rats and mongoose taken.....	430
Rats trapped.....	424
Mongoose trapped.....	6
Rats examined bacteriologically.....	390
Classification of rats trapped:	
<i>Mus alexandrinus</i> .....	51
<i>Mus musculus</i> .....	101
<i>Mus norvegicus</i> .....	31
<i>Mus rattus</i> .....	241
Average number of traps set daily.....	1,720

#### INDIA.

##### Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports: During the week ended January 6, 1912, 23 deaths from cholera and 6 from plague were reported in Calcutta; in all Bengal, 785 cases of plague, with 623 deaths; in all India, 11,076 cases of plague, with 9,114 deaths.

#### ITALY.

##### Naples—Examination of Emigrants.

Surg. Geddings reports:

Vessels inspected at Naples and Palermo, week ended January 27, 1912:

#### NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfect.
Jan. 22	San Guglielmo.....	New York.....			
25	Taormina.....	do.....	579	80	830
26	San Guglielmo.....	do.....	395	60	620
27	Madonna.....	do.....	535	90	580
	Total.....		1,509	230	2,030

#### PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfect.
Jan. 24	Oceanis.....	New York.....			
24	San Guglielmo.....	do.....	338	125	250
25	Arimatea.....	do.....			
	Total.....		338	125	250

**MEXICO.****Salina Cruz—Yellow Fever on Vessel.**

Consul Haskell reports the arrival, February 4, of the steamship *Ikalis* from Guayaquil, Ecuador, with 5 cases of yellow fever on board. The patients were removed to the lazaretto.

**Typhus Fever.**

Consul Schmutz, at Aguascalientes, reports the occurrence of 6 deaths from typhus fever during the week ended February 3.

**RUSSIA.****Typhus Fever.**

Consul Grout, at Odessa, reports the occurrence of 109 cases of typhus fever with 9 deaths during the 3 weeks ended January 13.

At Omsk, capital of Akmolinsk Province, Asiatic Russia, typhus fever was reported present in epidemic from January 29. Omsk is situated on the Trans-Siberian Railway.

**SIAM.****Bangkok—Cholera.**

Consul General Hansen reports that during the month of December, 1911, there occurred 410 deaths from cholera at Bangkok.

The population of Bangkok is approximately 600,000.

**TUNIS.****Declared Free From Cholera.**

According to information received from the ministry for foreign affairs at Paris the Regency of Tunis is no longer to be considered as cholera-infected, no case of cholera having occurred there since January 10, 1912.

**WEST INDIES.****Yellow Fever at St. Vincent.**

A case of yellow fever was reported February 19 at St. Vincent, Windward Islands.

**CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.****REPORTS RECEIVED DURING WEEK ENDED FEB. 23, 1912.**

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

**CHOLERA.**

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bahrein Island.....	Nov. 27-Dec. 30.....		1 260	In the Persian Gulf.
Calcutta.....	Jan. 31-Feb. 6.....		23	
Indo-China:				
Saigon.....	Dec. 26-Jan. 1.....	347	247	
Siam:				
Bangkok.....	Dec. 3-20.....		410	
Turkey in Europe:				
Constantinople.....	Jan. 15-21.....		1	

## CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports received during week ended Feb. 23, 1912.

## YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Mexico:				
Merida.....	Jan. 28-Feb. 3....	4	1	
West Indies:				
St. Vincent.....	Feb. 19.....	1		

## PLAGUE.

Brazil:				
Para.....	Jan. 21-27.....	6	6	
India:				
Calcutta.....	Jan. 31-Feb. 6....		6	
Indo-China:				
Saigon.....	Dec. 26-Jan. 1....	6		
Java:				
Kediri.....	Nov. 26-Dec. 2....	1	1	
Madison.....	do.....	5	5	
Mauritius:				
Nov. 24-30.....	16	12		
Turkey in Asia:				
Jiddah.....	Jan. 13-15.....	2		

## SMALLPOX.

Canada:				
Quebec.....	Feb. 4-10.....	13		
Montreal.....	do.....	5		
Windsor.....	do.....	2		
China:				
Hongkong.....	Dec. 31-Jan. 6....	28	22	
Shanghai.....	Jan. 1-7.....		1	
Egypt:				
Cairo.....	do.....	1		
Great Britain:				
Bristol.....	Jan. 29-Feb. 3....	2		
London.....	Feb. 14-20.....		1	
France:				
Paris.....	Jan. 14-20.....	8	1	
Germany:				
Hamburg.....	Jan. 21-27.....	1		
India:				
Calcutta.....	Jan. 21-Feb. 6....		1	
Indo-China:				
Saigon.....	Dec. 26-Jan. 1....	3		
Italy:				
Genoa.....	Jan. 16-31.....	13	1	
Leghorn.....	Jan. 29-Feb. 3....	15		
Naples.....	Jan. 21-27.....	8		
Palermo.....	Feb. 21-27.....	143	60	
Java:				
Batavia.....	Jan. 1-6.....	2		
Mexico:				
Aguascalientes.....	Jan. 26-Feb. 3....		1	
Guadalajara.....	Jan. 26-Feb. 10....		1	
Juarez.....	Feb. 3-10.....	2		
Mazatlan.....	Jan. 31-Feb. 6....		1	
Porfirio Diaz.....	Jan. 28-Feb. 3....	4	4	
Portugal:				
Lisbon.....	Jan. 21-27.....	2		
Russia:				
Batum.....	Dec. 1-31.....	1		
Moscow.....	Jan. 14-20.....	1	1	
Riga.....	Dec. 24-Jan. 27....	16		
St. Petersburg.....	Jan. 6-13.....	7	2	
Siam:				
Bangkok.....	Nov. 5-Dec. 2....		185	
	Dec. 2-30.....		441	
Teneriffe:				
Santa Cruz.....	Jan. 21-27.....		2	
Turkey in Asia:				
Beirut.....	Jan. 14-27.....	170	22	
Turkey in Europe:				
Constantinople.....	Jan. 22-28.....		6	

1 From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, Jan. 24, 1912.



## CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

## REPORTS RECEIVED FROM DEC. 30, 1911, TO FEB. 16, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

## CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Ras-el-Ketib.....	Dec. 27-Jan. 1.....			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria.....	Dec. 14-24.....	2	2	
Croatia and Slavonia.....				Total Oct. 22-Dec. 16: Cases, 36.
Sriem.....	Oct. 22-Dec. 16.....	36		
Hungary.....				Total Nov. 19-Dec. 23: Cases, 37.
Bacs-Bodog.....	Dec. 10-16.....	9	5	
Jasz-Nagykun-Szolnok.....	Dec. 3-23.....	11	7	
Torontal.....	Nov. 19-Dec. 16.....	17	2	
Bulgaria:				
Burgas.....	Nov. 22-23.....	2	2	
Varna.....	Nov. 6.....	1		
Dutch East Indies.....				Total Sept. 24-Nov. 25: Cases, 872; deaths, 525.
Batavia.....	Nov. 12-Dec. 23.....	21	8	Free Dec. 31.
India:				
Calcutta.....	Nov. 5-Dec. 30.....		277	
Madras.....	Nov. 26-Jan. 13.....	400	330	Madras Presidency, Dec. 1-31: Cases, 3,879; deaths, 2,412.
Rangoon.....	Oct. 1-Nov. 30.....	6	3	
Indo-China:				
Saigon.....	Nov. 20-Dec. 24.....	514	381	
Italy.....				Total June 8-Dec. 31: Cases, 15,985; deaths, 6,022.
Provinces—				
Caltanissetta.....	Nov. 26-Dec. 31.....	9	7	
Girgenti.....	do.....	105	57	
Messina.....	Nov. 26-Dec. 2.....	3	2	
Syracuse.....	Nov. 26-Dec. 23.....	15	9	
Malta.....	Nov. 19-Dec. 10.....	6	6	Dec. 23 declared free from cholera.
Montenegro.....	Nov. 4-11.....	9	5	
Persia:				
Adaban.....	Nov. 4.....	1	1	
Philippine Islands:				
Province—				
Union.....	Oct. 29-Dec. 4.....	5	5	
Roumania.....				Total Sept. 9-Dec. 13: Cases, 192; deaths, 42, including cases previously reported.
Districts—				
Braila.....	Sept. 11-Dec. 13.....	84	11	Nov. 6-23: 1 death, including cases previously reported.
Convolori.....	Oct. 31-Nov. 28.....	21	1	
Dolju.....	Nov. 6-Dec. 13.....	19	4	
Jalonitza.....	Oct. 31-Nov. 28.....	4		
Konstanza.....	Oct. 30-Nov. 28.....	8		
Prahova.....	Nov. 6-23.....	1	1	
Talomita.....	do.....	2		
Tulcea.....	Nov. 24-Dec. 13.....	15	1	
Servia:				
Belgrade, district.....	Nov. 26-Dec. 16.....		1	Declared free Dec. 31.
Siam:				
Bangkok.....	Nov. 5-Dec. 2.....		149	
Straits Settlements:				
Singapore.....	Nov. 5-18.....	3	3	
Tripoli:				
Tripoli.....	Oct. 25-Nov. 10.....			150 to 200 among the civil population and 25 to 30 among the military, Dec. 21, 1911.
Tunis Regency.....				Total Nov. 25-Jan. 4: Cases, 358; deaths, 396.
Beja district.....	Nov. 25-Dec. 7.....	30	35	
Bizerta district.....	Nov. 25-Dec. 5.....	9	15	
Turkey in Asia:				
Adana.....	Dec. 2-6.....	16	5	
Aleppo.....	Jan. 26-27.....	5	3	
Amara.....	Oct. 15.....	1	1	
Basra.....	Oct. 22-28.....	14	10	
Erzeroum, vilayet.....	Sept. 11-16.....	50	28	
Erzeroum.....	do.....	11	8	
Kaifa.....	Dec. 8.....			Present.
Kerbela.....	Oct. 20-28.....	10	10	

## CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports received from Dec. 30, 1911, to Feb. 16, 1912.

## CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Turkey in Asia—Continued.				
Kharput.....	Nov. 19-Dec. 30...	47	47	Sept. 1-Dec. 24: Cases, 1,648; deaths, 1,565.
Jiddah.....	Dec. 2-24.....	323	310	
Mekka.....	Dec. 4-24.....	905	879	
Mersina.....	Dec. 1-7.....	2	1	
Osmania.....	Dec. 1-6.....	2	4	Present.
Sinope.....	Dec. 7.....	2	1	
Trebizond and vicinity....	Sept. 18-23.....	64	34	
Tripoli.....	Jan. 4.....	.....	.....	
Turkey in Europe:				
Constantinople.....	Oct. 24-Jan. 2....	6	1	In Serres.
Durazzo.....	Dec. 7-13.....	2	.....	
Saloniki, vilayet.....	Nov. 6-19.....	4	3	

## YELLOW FEVER.

Brazil:				
Manaos.....	Nov. 19-Jan. 6.....	1	8	
Para.....	Dec. 9-16.....	1	1	
Ecuador:				
Bucay.....	Nov. 16-30.....	2		
Duran.....	Dec. 1-15.....	3	2	
Guayaquil.....	Nov. 16-Dec. 15.....	20	11	
Milagro.....	.....do.....	8	1	
Mexico:				
Esmita.....	Dec. 31-Jan. 6.....	1		
Maxcanu.....	.....do.....	1	1	
Merida.....	Nov. 12-Jan. 27.....	11	8	Total Aug. 1-Feb. 3: Cases, 60; deaths, 29.
Temax.....	Dec. 31-Jan. 6.....	1		
Portuguese Guinea:				
Bolama.....	Dec. 19-25.....	1	1	In an engineer on a vessel.
Venezuela:				
Caracas.....	Nov. 16-Dec. 31.....	17		
Sabana Grande.....	Dec. 12.....			Epidemic.
At sea.....	Dec. 17-23.....	1	1	On a vessel en route from Manaos to Para.

## PLAGUE.

<b>Algeria:</b>				
Philippeville.....	Oct. 19-Nov. 11...	8	2	Including 5 cases .p. 2096, Vol. XXVI.
<b>Brazil:</b>				
Bahia.....	Sept. 1-30.....		2	1 case pneumonic.
Para.....	Dec. 24-Jan. 20.....	12	4	
Pernambuco.....	Oct. 16-Jan. 16.....		4	
Rio de Janeiro.....	Nov. 12-Dec. 23.....	6	3	
<b>British East Africa:</b>				
Kismayu.....	Oct. 15-25.....	2		
<b>British South Africa:</b>				
Durban.....	Jan. 17.....	2	1	
<b>Chile:</b>				
Iquique.....	Nov. 12-Jan. 6.....	10	4	
Pisagua.....	Nov. 1-30.....	8		
<b>China:</b>				
Amoy.....	Jan. 13.....		1	
Hongkong.....	Dec. 9-30.....	4	3	
<b>Dutch East Indies:</b>				
Java.....				Total Mar. 1-Dec. 9: Cases, 1,777; deaths, 1,262.
Pasoeroean Residency, Malang District.....	Nov. 12-Dec. 30...	56	25	
Soerobaya.....	Oct. 17-27.....	2		
<b>German East Africa:</b>				
Dar-es-Salaam.....	Nov. 13-15.....	1	1	From the interior via Bergamogo.
<b>Ecuador:</b>				
Guayaquil.....	Nov. 16-Dec. 15....	102	42	

## CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports received from Dec. 30, 1911, to Feb. 16, 1912.

## PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Egypt.....				Total Jan. 1-Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Provinces—				
Assiout.....	Jan. 1-25.....	12	8	Sept. 11-16: Cases, 50; deaths, 28.
Behera.....	do.....	3	2	Sept. 11-16: Cases, 11; deaths, 8.
Galloubeh.....				Oct. 5-Dec. 26: Cases, 1.
Garbieh.....	Jan. 1-25.....	1		
Kena.....	do.....	1	1	Nov. 20-Dec. 13: Cases, 3; deaths, 3.
Minieh.....	do.....	2	1	Dec. 13: Cases, 1.
Hawaii:				
Honakaa.....	Feb. 9.....	1	1	
India:				
Bombay.....	Nov. 19-Jan. 13....	74	66	
Calcutta.....	Nov. 11-Dec. 30....		40	
Karachi.....	Nov. 26-Jan. 13....	38	36	Total, year 1911: Cases, 3,273; deaths, 3,046.
Rangoon.....	Oct. 1-Nov. 30....	38	39	
Bombay Presidency and Sind.....	Oct. 29-Dec. 30....	35,557	25,895	
Madras.....	Jan. 1-6.....	1	1	
Madras Presidency.....	Oct. 29-Dec. 30....	4,687	3,770	
Bengal.....	do.....	3,893	2,827	
United Provinces.....	do.....	12,270	10,459	
Punjab.....	do.....	1,229	895	
Burma.....	do.....	206	187	
Central Provinces.....	do.....	6,883	5,234	
Coorg.....	do.....	75	42	
Mysore State.....	do.....	4,913	3,801	
Hyderabad State.....	do.....	10,830	10,038	
Central India.....	do.....	4,242	3,486	
Rajputana and Ajmere.....	do.....	457	362	
Merwara.....				
North West Province.....	Oct. 29-Dec. 9....	1	1	Total for India, Oct. 29-Dec. 30; Cases, 85,243; deaths, 66,997; Total, year 1911: Cases, 828,535; deaths, 691,849.
Indo-China:				
Saigon.....	Nov. 13-Dec. 24....	15	5	
Mauritius.....	Nov. 3-23.....	13	8	
Peru:				
Salaverry.....	Dec. 25-Jan. 9....			Present in vicinity.
Philippine Islands:				
Cebu quarantine station....	Dec. 4.....	1		On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government....	Nov. 28-Dec. 20....	87	84	
Siam:				
Bangkok.....	Nov. 4-Dec. 2.....		2	
Straits Settlements:				
Singapore.....	Nov. 5-Dec. 30....	15	14	

## SMALLPOX.

Algeria:				
Algiers.....	Nov. 1-30.....		1	
Arabia:				
Aden.....	Nov. 28-Jan. 15....	5	3	And vicinity.
Argentina:				
Buenos Aires.....	Oct. 1-31.....		6	
Rosario.....	Oct. 1-Nov. 30....		31	
Austria-Hungary:				
Galicia.....	Dec. 24-30.....	1		
Trieste.....	Dec. 3-9.....	1		From s. s. Baron Call from Beirut.
Brazil:				
Bahia.....	July 1-21.....		1	
Pernambuco.....	Oct. 16-Nov. 30....		246	Report for Oct. 1-15 not received.
Rio de Janeiro.....	Nov. 26-Jan. 6....	3	1	
Canada:				
British Columbia—				
Nelson.....	Dec. 24-30.....	1		
Manitoba—				
Winnipeg.....	Jan. 14-20.....	1		

## CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports received from Dec. 30, 1911, to Feb. 16, 1912.

## SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Canada—Continued.				
Ontario—				
Kingston.....	Dec. 19-23.....	1	.....	
Ottawa.....	Dec. 10-Jan. 27.....	45	.....	
Sarnia.....	Oct. 17-Dec. 31.....	42	.....	
Toronto.....	Jan. 6-13.....	.....	1	
Quebec—				
Montreal.....	Dec. 17-Jan. 27.....	8	.....	
Quebec.....	Dec. 10-Feb. 3.....	195	1	
Ceylon:				
Colombo.....	Nov. 12-18.....	1	.....	
Chile:				
Iquique.....	Dec. 10-16.....	2	.....	
La Serena.....	Nov. 21-30.....	14	.....	
Talcahuano.....	Nov. 26-Dec. 23.....	14	3	
Valparaiso.....	Dec. 3-9.....	43	.....	
China:				
Canton.....	Nov. 11-Dec. 30.....	40	6	
Chungking.....	Nov. 18-Dec. 9.....	.....	.....	Present.
Hongkong.....	Nov. 12-Dec. 30.....	72	56	
Nanking.....	Dec. 10-16.....	.....	.....	Do.
Shanghai.....	Dec. 11-17.....	.....	1	
Cuba:				
Habana.....	Dec. 19-Jan. 19.....	2	.....	Case Dec. 19 from German s. s. Frankenwald from Spain and Canary Islands, case Jan. 19 from s. s. Mexico.
Egypt:				
Cairo.....	Dec. 10-16.....	1	.....	
France:				
Marseille.....	Nov. 1-30.....	.....	1	
Paris.....	Dec. 3-Jan. 13.....	43	2	
Germany.....	.....	.....	.....	Total, Dec. 31-Jan. 27: Cases, 9.
India:				
Bombay.....	Nov. 19-Jan. 13.....	71	39	
Calcutta.....	Nov. 19-Dec. 23.....	.....	16	
Madras.....	Nov. 26-Jan. 13.....	40	23	
Rangoon.....	Oct. 1-Nov. 30.....	29	9	
Indo-China:				
Saigon.....	Nov. 13-Dec. 24.....	20	.....	
Italy:				
Genoa.....	Dec. 1-Jan. 15.....	20	1	
Leghorn.....	Dec. 16-Jan. 27.....	84	1	
Messina.....	Nov. 19-Dec. 31.....	.....	5	
Naples.....	Dec. 3-Jan. 20.....	42	.....	
Palermo.....	Nov. 26-Jan. 20.....	1,893	595	
Turin.....	Jan. 15-21.....	2	.....	
Japan:				
Arima-Mura.....	Nov. 12-18.....	6	1	11 miles east from Kobe.
Kanagawa, ken.....	Dec. 17-23.....	1	.....	
Java:				
Batavia.....	Nov. 12-Dec. 23.....	15	4	
Malta.....	Dec. 24-Jan. 6.....	2	1	
Mexico:				
Aguascalientes.....	Dec. 18-Jan. 28.....	.....	3	
Chihuahua.....	Nov. 20-Jan. 21.....	62	21	
Coahuila, State.....	Oct. 1-30.....	.....	16	
Guadalajara.....	Jan. 14-20.....	.....	1	
Juarez.....	Dec. 19-Feb. 3.....	7	4	
Magdalena.....	Dec. 23-Jan. 31.....	.....	37	Jan. 31, 81 cases present.
Mazatlan.....	Dec. 11-Jan. 30.....	.....	9	
Mexico.....	Nov. 26-Dec. 30.....	31	18	
Monterrey.....	Dec. 11-24.....	.....	2	
Porfirio Diaz.....	Dec. 3-Jan. 22.....	.....	26	
San Antonio.....	Jan. 1-21.....	12	9	
San Carlos.....	Jan. 1-21.....	.....	.....	Present.
Sandoval.....	Dec. 16.....	.....	.....	Do.
San Ignacio.....	Jan. 8.....	3	.....	
Saric.....	Jan. 21-27.....	.....	6	
Santa Ana.....	Jan. 8.....	4	.....	
San Luis Potosi.....	Nov. 12-Dec. 2.....	3	.....	
Tampico.....	Dec. 1-31.....	4	4	
Tapachula.....	Nov. 1-Dec. 31.....	.....	14	
Portugal:				
Lisbon.....	Dec. 9-Jan. 6.....	19	.....	

SMALLPOX—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	Jan. 27	163,084	51									1	1	
Agua Calientes	Feb. 3	40,000	42					1				1	1	1
Aix-la-Chapelle	Feb. 13	156,513	53	6								1	1	1
Amsterdam	Jan. 27	580,962	149	13								1	1	4
Antwerp	Jan. 20	327,668	80	12								4	1	
Barmen	Dec. 23	170,900		3										2
Do	Jan. 13			3									3	
Beirut	Jan. 20	80,000	25	3				7		5				
Belfast	Jan. 27	385,492	206	27						1		1	2	
Birmingham	do	842,512	252									2	2	10
Bremen	Jan. 13	245,850	83	12								1	5	6
Do	Jan. 20		68	4								1	2	8
Budapest	Jan. 13	1,000,000								4	6		2	7
Cairo	Jan. 7	689,439	462	22				1	1			2	8	
Calcutta	Jan. 6	890,493	521	32	6	23		1	1	2				
Catania	Jan. 26	207,600	78	1								1	1	1
Cologne	Jan. 20	527,847	149	15						1	2	3	6	6
Colombo	Jan. 6	226,920	190	16						12				
Copenhagen	Jan. 13	465,000	143	22							1			
Dalny	Jan. 6	47,983	25										2	
Do	Jan. 13		10							1				
Denia	Jan. 27	12,431	3									1		
Dresden	Jan. 13	555,000	142	13							3	5		
Dublin	Jan. 27	406,536	195	37							2		1	3



## MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—								
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.
												Measles.
												Whooping cough.
Dundee.....	Jan. 27	171,006	48	6								1
Durban.....	Jan. 6	69,165	10									1
Edinburgh.....	Jan. 27	321,200	109	13								6
Erfurt.....	Jan. 13	125,500	34	3								8
Do.....	Jan. 20		33	4								1
Frankfort-on-Main.....	Jan. 13	423,600	93									3
Ghent.....	Jan. 20	166,235	33	3								3
Glasgow.....	Feb. 2	785,600	307						3	1	1	6
Guadalajara.....	Feb. 3	119,468	73					2				22
Havre.....	Jan. 27	136,159	74	14						1		2
Hull.....	do.....	282,987	67						1			
Kobe.....	Jan. 14	418,646	149								1	2
Königsberg.....	Jan. 13	251,000	99	15							1	2
Do.....	Jan. 20		88	11								1
Leeds.....	Jan. 27	445,568	157	14						4	5	1
Leipzig.....	Jan. 13	605,755	152	20					1	1	2	2
Do.....	Jan. 20		151	22					1	1	3	3
Liverpool.....	Jan. 27	752,055	296	32						2	3	3
London.....	Jan. 20	7,340,125	1,859	24				1		4	4	20
Do.....	Jan. 27		2,055							4	4	15
Manchester.....	do.....	631,533	276	29						2	1	11
Mannheim.....	Jan. 6	200,000	34	6						1		2
Mazatlan.....	Feb. 6	22,000	21	5				1				1
Munich.....	Jan. 13	610,000	175	25					1		3	1
Do.....	Jan. 20		162	22					1			1
Nagasaki.....	Jan. 7	178,074	41	6								1
Nagaya.....	Dec. 30	419,434	111								3	1
Do.....	Jan. 6		100						1		1	
Nantes.....	Jan. 14		94	18					1			
Do.....	Jan. 21	161,908	69	18					2			
Newcastle-on-Tyne.....	Jan. 27	267,261	92	3						1		
Nottingham.....	Jan. 20	259,342	81	6					1		1	2
Newcastle-on-Tyne.....	do.....	267,261	83	7						1		
Nottingham.....	Jan. 13	259,942	86	9							1	7
Odessa.....	Dec. 30	546,000	167	27				1	2	2	2	6
Do.....	Jan. 6		150	25				6		1	3	2
Do.....	Jan. 13		161	20				2	3		2	2
Ottawa.....	Jan. 27	90,000	31	1								
Palermo.....	Jan. 20	340,000	220	15				49		2	4	1
Para.....	Jan. 13	185,000	11	2								
Do.....	Jan. 20		6	1								
Paris.....	do.....	2,888,110	961	206				1	10	3	5	14
Porfirio Diaz.....	Feb. 3	16,000	15	1				4				
Port Elizabeth.....	Dec. 23	30,692	20	3					2			
Do.....	Dec. 30		15	1					1			
Prague.....	Jan. 13	225,204	88	9						1		18
Do.....	Jan. 20		76	17						1		10
Quebec.....	Feb. 10	78,200	3									
Rangoon.....	Jan. 6	289,432	169	3		4	11					2
Rio de Janeiro.....	Dec. 30	912,169	363	68								3
Do.....	do.....		377	65								4
Rome.....	Sept. 16-	551,740	1,093	138					33	1	5	1
Rotterdam.....	Oct. 21											
Do.....	Jan. 20	436,015	105									1
Sargon.....	Jan. 27		116									2
Do.....	Jan. 1	220,000				212						
St. Johns.....	Jan. 20					247						
St. Petersburg.....	Jan. 6	1,907,708	725	136				3		21	15	8
San Luis Potosi.....	Dec. 16	82,479	45	2						4		23
Santa Cruz de Tene- rife.....	Jan. 20	46,000	18	1				1				1
Shanghai.....	Dec. 31	492,000	139	14						1		1
Do.....	Jan. 7		167	18				1				1
Do.....	Jan. 14		125	20								10
Sheffield.....	Jan. 13	455,000	129	13					2			1
Do.....	Jan. 20		114	10					1			2
Singapore.....	Dec. 23		192	22				2		1		1
Do.....	Dec. 30	303,328	198	19	3				3			

## MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—									
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.
Smyrna.....	Dec. 30	400,000	280	46						4		2	
	Jan. 20			31						1		1	
Southampton.....	Jan. 27	120,891	31	3						1		1	
Stettin.....	Jan. 20	237,000	69	6									
Stockholm.....	Jan. 13	343,832	90	19						2	2	2	
Stoke-on-Trent.....	Jan. 20	237,153	80	8						2	1	1	3
Do.....	Jan. 27		100	10						2	1	1	3
Tarragona.....	Jan. 20	23,150	9	1									
Do.....	Jan. 27		9	1									
Tientsin.....	Jan. 13	425,500	19	4									1
Trieste.....	Jan. 6	233,925	104									2	1
Do.....	Jan. 13		128							1		2	
Turin.....	Jan. 21	401,555	144	13								3	1
Do.....	Jan. 28		163	21						1		2	
Vancouver.....	Jan. 13	100,333	22	2								1	
Do.....	Jan. 20		25									1	
Vienna.....	Jan. 13	2,064,583	92								4	5	4
Yokohama.....	Jan. 15	419,630								2			
Do.....	Jan. 22									1		1	

## MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (untabulated).

**AUSTRALIA**—*Newcastle*.—Month of December, 1911. Population, 60,500. Total number of deaths from all causes 54, including tuberculosis 5, typhoid fever 2.

**BRAZIL**—*Ceara*.—Month of December, 1911. Population, 60,000. Total number of deaths from all causes 111, including tuberculosis 18, typhoid fever 7.

**CANADA**—*Victoria*.—Month of January, 1912. Population, 31,620. Total number of deaths from all causes 39, including tuberculosis 2.

**GREAT BRITAIN**.—Week ended January 20, 1912.

*England and Wales*.—The deaths registered in 77 great towns correspond to an annual rate of 14.8 per 1,000 of the population, which is estimated at 17,559,219.

*Ireland*.—The deaths registered in 21 principal town districts correspond to an annual rate of 21.8 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Clonmel, viz, 5.1, and the highest at Kilkenny, viz, 49.6 per 1,000.

*Scotland*.—The deaths registered in 18 towns correspond to an annual rate of 17.3 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Hamilton, viz, 7.9, and the highest at Ayr, viz, 26.4 per 1,000. The total number of deaths from all causes was 725, including diphtheria 10, measles 56, scarlet fever 6, typhoid fever 4.

**HAWAII—Honolulu.**—Two weeks ended January 27, 1912. Population 39,306. Total number of deaths from all causes 51, including tuberculosis 6, typhoid fever 1.

**JAPAN—Formosa.**—Three weeks ended December 23, 1911. Population 3,341,217. Total number of deaths from all causes not reported. The deaths include diphtheria 3, tuberculosis 14.

**PANAMA—Panama.**—Four weeks ended January 27, 1912. Population 30,000. Total number of deaths from all causes not reported. The deaths include tuberculosis 12.

**PORTO RICO—Ponce.**—Three weeks ended February 3, 1912. Population 27,952. Total number of deaths from all causes not reported. The deaths include tuberculosis 10.

**SIAM—Bangkok.**—Month of December, 1911. Population 600,000. Total number of deaths from all causes not reported. The deaths include cholera 410, smallpox 441.

**TASMANIA—Hobart.**—Month of December, 1911. Population 191,211. Total number of deaths from all causes 148, including measles 1, tuberculosis 16, typhoid fever 3.

By authority of the Secretary of the Treasury:

RUPERT BLUE,  
Surgeon General,

*United States Public Health and Marine-Hospital Service.*

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